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ABSTRACT

The main thrust of the project described here is the development and evaluation of a curriculum delivery system which combines the advantages of computer assisted instruction for individualizing and monitoring student progress with the advantages of educational television for vividness in presenting material. The project is focusing on developing a modular curriculum to meet the need of small business owners for training in management skills. The final product will be a modularized curriculum available through video cassettes (for presentations), texts (for detailed explanations and exercises), and computer terminals (for detailed exercises, evaluation, and monitoring progress) at locations and times convenient to the student. (Author/VT)

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COMPUTER-BASED INSTRUCTION IN AN OUTREACH PROGRAM

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IR006 234

COMPUTER-BASED INSTRUCTION in an OUTREACH PROGRAM

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ABSTRACT

The project described here is developing a model curriculum delivery system to meet a special need. Small businesses usually fail because the principals lack management skills. Training in these skills is widely available but non-traditional curriculum delivery methods are needed to bring the training to the business owner at his location, time, and place rather than at the location, time and place of the training institution.

This overview describes an educational system for training small business owners which will deliver the instruction at the convenience of the student - and be effective. We are developing a modular curriculum for delivery via video cassette, text, and computer terminal which will effectively train the small business owner at his pace and which will also serve as a model for a flexible multimedia educational system built around a digital computer.

INTRODUCTION

The main thrust of this project is the development and evaluation of a curriculum delivery system which combines the advantages of computer assisted instruction (CAI) for individualizing and monitoring student progress with the advantages of Educational Television (ETV) for vividness in presenting material. In addition, the project is focusing on developing a modular curriculum to meet the need of small business owners for training in management skills.

The final product of this project will be a modularized curriculum available through video cassettes (for lectures, etc.), texts (for detailed explanations and exercises) and computer terminals (for detailed exercises, evaluation and monitoring progress) at locations and times convenient to the student.

Background of the Problem

There are many areas of instruction that require a non-traditional approach to the delivery of the necessary curriculum. One of these areas is the training of small business owners in the management skills they need in order to succeed. Traditional instruction can provide these skills but it is only available if the small business owner can place himself regularly where the instruction is given. This is often impossible because the nature of the small business enterprise places great demands on time and makes scheduling time away from the work on a regular basis impossible.

A curriculum delivery system for this population should take full advantage of the current capabilities of technology to provide flexibly available and individualized educational opportunity, so that those in need of the instruction can receive it on their time schedule and at their pace.

For many months, the College of Business Administration at the University of San Francisco worked with the San Francisco Office of the Small Business Administration in developing Special Management Training Courses for Asian-American and Latino-American small entrepreneurs. These courses were well received. However, our discussions with the participants indicated a need for a curriculum delivery system that went even further outside the traditional classroom approach.

In a survey of the participants in the Special Management Training Course for Asian-American small businesses (Lorton, Ma & Sam) suggestions for improvement of the course were solicited. The participants wanted more attention to their individual problems, more active participation with some of the topics covered and a modification in the meeting schedule. On this last point there was little agreement on the type of modification since every respondent had different demands on time, different preferences for days, etc.

The kind of curriculum delivery system these small business owners need is one which allows them to participate on a schedule they can determine and one which maximizes the individual attention and practice they can receive. These needs are not unique to this application and, if met, could help provide a model curriculum delivery system for other applications.

Nature of the Solution.

What is needed is an open entrance - open exit training program with intensive individualization of instruction and a high level of active participation by the student. We feel that educational television in conjunction with computer assisted instruction can provide this.

In response to this problem, we developed a project with the following intended activities:

1. Test and evaluation of the combination of CAI and ETV in delivering curriculum;

2. Test and evaluation of a modular curriculum for management training of small business owners.

The project will produce:

1. An effective, modular curriculum for management training for small business owners which could be implemented at little cost in many locations;

2. A model for a curriculum delivery system which could be adapted to many areas where training of inplace personnel is needed and must be scheduled according to their availability rather than according to the availability of instructors.

The evaluation of the effectiveness of the curriculum will be accomplished by monitoring the business performance of the students. We have some preliminary experience in developing a method for evaluating the effectiveness of management assistance to minority owned small businesses (see Cammarota & Montefusco or Cammarota, Lorton & Montefusco) and will apply the methods of that experience to this project.

The dissemination of this curriculum is also important to the solution as it confirms the strength of the model curriculum system. We expect workable dissemination to be one outcome. Text and video cassette material are easily moved from one place to another. The computer delivered material adds extremely important dimensions of pacing, performance monitoring and active interaction to the curriculum. We are working toward transport-ability of this material by developing it in a widely available computer language and on a computer system in widespread use in educational institutions.

DESCRIPTION OF THE PROJECT

This project has been funded by the Fund for the Improvement of Post Secondary Education and is currently in operation in the San Francisco area. This is the final year of the project and the preliminary response from those specifically concerned (small business owners, personnel at the Small Business Administration) has been quite positive. In addition other members of the business community as well as members of the educational community have expressed strong interest in trying to fit this educational system to their needs.

Project Scope

The project has two facets. The first is testing a curriculum delivery system which will provide an open-entry training environment through the combination of computer-assisted instruction and educational television. The second facet is the development of a modular curriculum for the specific application of management training for small businessmen.

Curriculum Delivery System.

Two main facilities are being used. The EDP Resource Center of USF's College of Business Administration is being used for the computing resource. The Educational TV Center of the Archdiocese of San Francisco is providing the television resource as well as the remote sites for the instruction.

The EDP Resource Center has been used for a number of computer assisted and computer aided instructional applications. Several courses in the College of Business make heavy use of the computer both as a computer, per se, and as a source of instruction. One course has been developed for an outside agency (see Lorton & Reyes, 1975) where students from the Defense Contract Services Region - San Francisco spend two weeks in an intensive course on computer programming for Automatic Test Systems. The experience and facilities of this Center was used to produce the computer assisted instruction components as well as the progress monitoring capability.

The Educational TV Center of the Archdiocese of San Francisco has implemented and refined an Instructional Television Fixed Service (ITFS) network. This system provides microwave TV transmission to 55 elementary and eight secondary schools throughout the San Francisco Bay Area. The ETV center contributed the expertise gained from experience to assist in producing the video portion of the modular curriculum.

Modular Curriculum for Management Training of Small Businesspersons

The curriculum is being developed to parallel the curriculum already started for the special management training institutes developed in conjunction with the Small Business Administration.

The curriculum includes the following topics:

Title	approx. hours
Accounting and Taxation for the Small Business	15
Financial Analysis for the Small Business	5
Legal Aspects of Small Business	5
Obtaining Funding and Assistance	5
Sales and Marketing for Small Businesses	10
Labor and Personnel Issues in Small Businesses	5
Planning for the Future	5
Total	50 hours

Our experience with the Special Training Institutes and with surveys of small business owners indicates that these topics constitute the essence of the content needed. The approximate duration represents the instructional time which various faculty members think is required for each topic in a course of this nature.

System Operation.

At each site is a video cassette player and a number of terminals linked to the computer system located at the University of San Francisco. Students come into these centers when their schedules permit and work at their own pace through a variety of possible activities. A student may choose to view a video cassette on financial analysis then sign on to the computer system and practice the concepts discussed in the video material. The student may be working on an exercise in his text and may want to check his progress with the computer. The student may also be continuing a sequence of drills in basic accounting concepts or he may have a specific problem from his business and may want to use the computer as an aid in its solution.

The system is designed to be as flexible as possible in order to conform to the needs of the student and to his pace. A student may have difficulty with English and want to review the Accounting (the Language of Business) video material several times going between the drills on the terminal and the video tape until he feels he solidly understands this fundamental area.

Project activities

Development of Curriculum Modules

The first phase of the project was devoted to initial development of the curriculum modules for the project. These consist of scripts for video lectures and the necessary text material to complete the presentation of the topics. Computer programs are providing computer assisted instruction in each topic area as well as exercises and activities to enable monitoring of student progress. The progress monitoring function is developed to parallel the video scripts and text material.

Initial Test Period

The initial test period was used to refine--in close conjunction with the students--the material developed in the first phase.

Revision of Curriculum and Production of Video Cassettes

The three-month summer period between the first and second year of the project was devoted to a thorough revision of the curriculum materials. At the end of this period, the curriculum materials were produced in the format to be used for the test and evaluation phase of this project. (The final form will be produced after the fourth phase of the project).

Final Test and Evaluation

The final test and evaluation constitutes the last major phase of the project. During this phase the curriculum delivery system will consist of video cassettes and computer terminal time made available at selected ITFS network sites during a range of hours determined by the students.

In addition to evaluation of the curriculum and system through tests and questionnaires given to the participants, we will monitor and evaluate actual practices of the small business owners, to see if the lessons contained in the curriculum are being used in the most effective way.

PROSPECTS

The project described here is an attempt to meet a growing need as educational institutions move to serve non-traditional populations effectively and at reasonable cost. In addition, we feel it has implications as a model for a computer based curriculum delivery system.

It is within easily available current technology to use the material we are developing in a library type setting. That is, once the material is finished it could well be placed in a location where cassettes, players and terminals could be drawn from a library and used in the home.

Because the monitoring is done by computer and the student sets his schedule and pace, the location where the instruction is given is no constraint at all. This means that no one potential student would be excluded from being able to secure the instruction he needs - it can truly be delivered to him.

The prospects for this model of curriculum delivery using technology which will become easily available in the very near future are also excellent and exciting. Specifically the combination of micro processor based home computers (such as that used by Texas Instruments in their recently announced home television game apparatus) and Video Discs are ideally suited to adoption for use by the educational system modelled in this project.

Our experience with this project has given us cause to be quite optimistic on the view that computer based technology is on the threshold of finally revolutionizing education by extending opportunities without limit beyond the traditional facilities and methods.

ACKNOWLEDGMENT

We would like to acknowledge the work of the ETV Center on this project and the Fund for the Improvement of Post Secondary Education whose support has made the system possible.

REFERENCES

Cammarota, G. & Montefusco, D. "Evaluation of Management Assistance to Minority Owned Small Businesses." Unpublished MBA Thesis. University of San Francisco, 1976

Cammarota, G., Lorton, P. & Montefusco, D. "A Procedure for Evaluation of Management Assistance to Small Businesses." In preparation.

Lorton, P., Ma, P. & Sam, D. "Asian-American Businesses in the San Francisco Bay Area: A Preliminary Report on Problems and Prospects." In preparation.

Lorton, P & Reyes, E. "Meeting the training needs of quality assurance personnel in computer programming for Automatic Test Systems." International Conference on Advances in Automatic Testing Technology. (IERE Conference Proceedings #30), London, 1975.

SUMMARY OF VIDEO MATERIAL

0. Introduction
    1. How to Use this Course - Lorton, Muscat & Lazarus
    2. The American Dream - Roy Worthington

I. Accounting and Taxation for the Small Businessperson
    1. Introduction to Accounting - David Weiner
    2. Introduction to Taxation - Marc Lumer
    3. Tax Hints for Small Businesses - Michael Thompson
    4. The Language of Business - SBA Film

II. Financial Analysis for the Small Businessperson
    1. Financial Ratios - David Weiner
    2. Cash Flow - Bonnie Moore
    3. The Heartbeat of Business - SBA film

III. Legal Aspects of Small Business
    1. Introduction - David Scalise
    2. Legal Structures for Small Businesses - Pam Rohan

IV. Obtaining Funding and Assistance
    1. Suggestions from a Banker - First Enterprise Bank
    2. Banking and Small Business - Hal Walt

V. Sales and Marketing for Small Businesses
    1. Concerns of the Market - William Regan
    2. Introduction to Marketing - Karl Boedecker
    3. Franchising - Roger O'Callaghan
    4. Personal Selling - Brad Fregger

VI. Labor and Personnel Issues in Small Businesses
    1. Some Union Issues - Muscat Bros.
    2. OED Compliance - Ernie Reyes
    3. Behavior in Organizations - Nick Imparato
    4. Personnel Issues - N. Imparato & Larry Murphy
    5. Affirmative Action and the SBA - Eugene Brown

VII. Planning
    1. Planning for the Future - Paul Lorton, Jr.
    2. The Calendar Game - SBA Film
    3. The Business Plan - SBA Film

VIII. General Business Issues & Problems
    1. Overview of a Small Business - Czelsaw Grycz
    2. Office Management - Raymond Jones
    3. Overview of Small Business Practice - Stewart Krackover
    4. Personal Concerns in Small Businesses - Czeslaw Grycz
    5-6. Women in Business - Two "Woman" PBS programs
    7. The Family in Business - Circle Cleaners

SUMMARY OF C. A. I. MATERIAL

1. Accounting and Taxation

    a. Accounting terms
    b. Exercises in the Balance Sheet
    c. Exercises in the Income Statement
    d. Tax Concepts

2. Financial Analysis

    a. Financial Ratios
    b. Seasonal Variations

3. Legal Aspects

    a. Laws in Business
    b. Forms of Business Organizations
    c. Workmen's Compensation

4. Obtaining Funding

    a. Preparing a Prospectus
    b. Sources of Funding

5. Sales and Marketing

    a. Pricing Policies
    b. Marketing Simulation
    c. Sales and Marketing Concepts and Terms
    d. Marketing Surveys

6. Labor and Personnel Issues

    a. Personnel Policy
    b. EEO and Affirmative Action

7. Planning

    a. Steps in Planning
    b. Concepts in a Business Plan
    c. Forcasting Methods
    d. Risk Taking

8. Support Programs

    a. SBA Literature Summaries
    b. Course Guide